

## WEST Search History





DATE: Saturday, June 10, 2006

| Hide?                    | <u>Set</u><br><u>Name</u>   | <u>Query</u>  | <u>Hit</u><br><u>Count</u> |
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|                          | <i>DB=USPT; PLUR=NO; OP=OR</i>  |   |                            |
| <input type="checkbox"/> | L15   | l12 and ((search\$ or request\$ or quer\$) with (authent\$ or authoriz\$ or login or password\$ or secret\$) with (display\$ or output\$ or view\$))          | 21                         |
| <input type="checkbox"/> | L14   | (l10 or l11) and L13  | 41                         |
| <input type="checkbox"/> | L13   | 707/1-5.ccls.   | 7282                       |
| <input type="checkbox"/> | L12   | (l10 or L11) and ((search\$ or request\$ or quer\$) with (authent\$ or authoriz\$ or login or password\$ or secret\$) with (display\$ or output\$ or view\$)) | 21                         |
| <input type="checkbox"/> | L11   | L9 and (authentcat\$ or authoriz\$ or password\$ or secret\$).ti.   | 43                         |
| <input type="checkbox"/> | L10   | L9 and (authentcat\$ or authoriz\$ or password\$ or secret\$).ab.   | 160                        |
| <input type="checkbox"/> | L9  | 707/9.ccls.   | 947                        |
| <input type="checkbox"/> | L8  | L4 and (circuit\$ with printer\$)   | 4                          |
| <input type="checkbox"/> | L7  | L4 and (authentcat\$ or authoriz\$ or password\$ or secret\$).ab.   | 0                          |
| <input type="checkbox"/> | L6  | L4 and (authentcat\$ or authoriz\$ or password\$ or secret\$).ti.   | 0                          |
| <input type="checkbox"/> | L5  | L4 and (authentcat\$ or authoriz\$ or password\$ or secret\$)   | 5                          |
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| <input type="checkbox"/> | L3 | L1 and print\$ | 1 |
| <input type="checkbox"/> | L2 | L1 and print\$ | 1 |
| <input type="checkbox"/> | L1 | 7035812.pn.    | 1 |

END OF SEARCH HISTORY

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INFORMATION - Too many terms in truncation. Last term searched: PRINTER-EQUIPMENT\S-A-T-T-TICKET

**Advanced Search:**

Inspec - 1898 to date (INZZ)

[limit](#)

## Search history:

| No. | Database | Search term   | Info added since | Results |                             |
|-----|----------|---|------------------|---------|-----------------------------|
| 1   | INZZ     | (authentica\$ OR authoriz\$ OR secret\$ OR login).AB. | unrestricted     | 14477   | <a href="#">show titles</a> |
| 2   | INZZ     | 1 AND circuit   | unrestricted     | 265     | <a href="#">show titles</a> |
| 3   | INZZ     | 2 AND printer\$                                       | unrestricted     | 1       | <a href="#">show titles</a> |

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 Information added since:  or: 
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Select special search terms from the following list(s):

- ☒ Publication year 1950-
- ☒ Publication year 1898-1949
- ☒ Inspec thesaurus - browse headings A-G
- ☒ Inspec thesaurus - browse headings H-Q
- ☒ Inspec thesaurus - browse headings R-Z
- ☒ Inspec thesaurus - enter a term
- ☒ Classification codes A: Physics, 0-1
- ☒ Classification codes A: Physics, 2-3
- ☒ Classification codes A: Physics, 4-5

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order

☒ **document 1 of 1** [Order Document](#)
**Inspec - 1898 to date (INZZ)**
**Accession number & update**

0005682775 20051201.

**Title**

Stencil printing - opening the process control window.

**Source**

Circuits Assembly, {Circuits-Assem-USA}, July 1997, vol. 8, no. 7, p. 48, 50, 52, 54, 0 refs, CODEN: CIATE5, ISSN: 1054-0407.

Publisher: Miller Freeman, USA.

**Author(s)**

[O-Neal-D](#), [Nauss-E](#), [Belmonte-J](#).

**Author affiliation**

O'Neal, D., Nauss, E., Belmonte, J., MPM Corp., Franklin, MA, USA.

**Abstract**

By using a strategic approach to analyze and optimize the most crucial stencil printing process steps, it is possible to improve PCB throughput by creating wider process window latitudes. The **secret** is knowing precisely which parts of the process are the most forgiving, have little impact on throughput or need constant monitoring with closed-loop feedback to maintain control of potentially yield-reducing variables. One of the keys is to concentrate on the process variables with the greatest demonstrated impact on overall efficiency. Some stencil printing variables have a "sweet spot", where a small change produces a major improvement. Other variables require rethinking the process. However, always keep in mind that a six-sigma level, or 3.4 defective printed parts per million, is the goal of most advanced stencil printing operations. To establish and maintain this low defect level, use a statistical design of experiments (DOE) methodology to evaluate and verify the effects of any changes before committing to production. To ensure repeatable results, keep it simple by altering one variable at a time and avoid over-reacting. Rank the order of the most crucial steps and focus on the parameters within those categories that significantly affect yield and throughput. For stencil printing, the ranking starts with the stencil **printer** platform, followed by the paste, stencil and PCB.

**Descriptors**

ASSEMBLING; CIRCUIT-RELIABILITY; DESIGN-OF-EXPERIMENTS; FEEDBACK;  
MONITORING; PRINTED-CIRCUIT-DESIGN; PRINTED-CIRCUIT-MANUFACTURE;  
PROCESS-CONTROL; QUALITY-CONTROL; SOLDERING.

**Classification codes**

B2210D Printed-circuit-manufacture\*;  
B0170E Production-facilities-and-engineering;  
B0170G General-fabrication-techniques;  
B0170N Reliability;

B0170C Project-and-design-engineering;  
B0240Z Other-topics-in-statistics;  
B2210B Printed-circuit-layout-and-design;  
B0170L Inspection-and-quality-control;  
C3350E Control-applications-in-the-electronics-industry\*;  
C3355F Control-applications-in-assembling;  
C1140Z Other-topics-in-statistics;  
E0210J Statistics\*;  
E1020 Maintenance-and-reliability;  
E1400 Design;  
E1520C Assembling;  
E1520E Joining-processes-and-welding;  
E1525 Industrial-processes;  
E1610 Inspection-and-quality-control;  
E3644 Electronics-industry.

**Keywords**

stencil-printing; process-control-window; stencil-printing-process; PCB-throughput; process-window-latitude; throughput; monitoring; closed-loop-feedback; yield-reducing-variables; six-sigma-level-quality; defective-printed-parts; statistical-design-of-experiments; defect-level; yield; **stencil-printer-platform**; solder-paste; solder-stencil; PCB.

**Treatment codes**

P Practical.

**Language**

English.

**Publication type**

Journal-paper.

**Availability**

SICI: 1054-0407(199707)8:7L:48:SPOP; 1-E.

CCCC: 1054-0407/97/\$2.00+0.25.

**Publication year**

1997.

**Publication date**

19970700.

**Edition**

1997035.

**Copyright statement**

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